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PRODUCTIVITY MANAGEMENT SYMPOSIUM
INDUSTRIAL LIAISON PROGRAM
MARCH 17, 1982

THE CUP IS HALF FULL:
AMERICAN FIRMS REACT TO THE PRODUCTIVITY CRISIS

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W.P. #1300-82

April 28, 1982

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Thank you for the opportunity to speak here today. American industry and its managers have felt battered in the domestic and world economic environments over the last decade. The so-called "crisis in productivity" has a long history, but came to the forefront of industrial concerns about the time of the first Arab oil embargo in 1973. Following this, the interest rate rise and leveling, commodity shortages and international competition with our mature industries, such as steel and autos, have exacerbated the situation.

American firms have taken actions to respond to their weakened position. To begin with, the responses can be divided into the long-term strategic and systematic responses and the short-term ad hoc responses. At the outset, let me say that regardless of how enmeshed they were in a crisis, those firms which have taken a strategic and systematic view have been more successful.

Overall, a strategic and systematic method of addressing the need to increase the efficiency of a firm without sacrificing the quality of the product or service offered requires that everyone within the firm be involved in the formulation and execution of the productivity enhancement program. The business plan and the changes that have been proposed at the top of the firm are only the beginning of the work for top management. They must then systematically obtain the cooperation, literal and judgmental, of the division managers, plant supervisors, foremen and direct labor. Everyone must work in concert; the firm's efficiency is greater than the sum of its parts.

Also, it is noteworthy at the outset that the firms with the best and most successful programs for increasing

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their efficiency have "banned the naysayers." Those who immediately take a skeptical attitude, those who point out the reasons why not and those who believe that change is too difficult to bring about and not worth the effort have been asked to step aside. After quantification, to the extent that it still has credibility, management judgment must reign again; this is the reason for the existence of management in the first place. The pointing contests to assign blame have stopped, and proactive forward-looking moves have taken their place.

The genesis of the research I am reporting was quite simple. Last year a project was organized within the Sloan School to investigate the way in which a group of the best US firms were implementing their quality assurance and quality control programs. Students at the Sloan School of Management are required to complete a thesis prior to obtaining their Masters degree. In the spirit of the professional school that we are, the theses often have a practical orientation. Thus several students, under my supervision, set out to interview a wide variety of managers and executives, and then to synthesize the empirically generated information with that offered in the texts and literature. Out of this study came three basic conclusions:

1. The Corporate culture was a prime determinant of the quality assurance system in place;
2. Relationships with the Department of Defense had a positive and extremely significant relationship with the sophistication of the quality assurance system in place; and
3. "Quality is free" in an organization only from the perspective of corporate staff, not plant and line managers!

Over the course of this research we were told time and time again of the need to research the development of productivity programs

and the measurement of productivity at the firm level. Responding to this very real problem, with the financial support of several companies connected with MIT's Industrial Liaison Program, I organized a project to do just that. The companies we chose to investigate ranged from banks to mature manufacturing firms, high technology electronics companies, and small service companies - over 25 firms in all. Each firm was involved in a series of interviews, with as many as 80 in one company to as few as two or three at the top of other companies.

All of the companies perceived that inefficiency (low productivity) within their organizations was a problem. Surprisingly, according to the interviews, technology and lack of new capital equipment took only ten percent of the blame. The remainder was attributed directly and indirectly to people problems -- mostly the failure of managers to do their job, e.g., provide the systems and leadership that would foster a productive organization. As one executive relayed to me (quoting Pogo), "We have found the enemy and they are us."

The most important management action that is being (re)learned is the skill of management itself - the bulk of which centers on people and process management. Before I go further into the synthesis of the emerging formula and some examples, it is worthwhile to discuss the "crisis."

THE AMERICAN CRISIS

We have a tradition of reacting to crises, which in some ways has helped the energy crisis by providing a lot of hot air around the boardroom, the Halls of Congress, the cocktail lounge and the living

room. These "crises" include: "Sputnik," "The Missile Gap," "Why Johnny can't read," "Urban Bankruptcy," "Over Regulation" and the like. These were, and in some cases are, very real. It is just that in this country we build things up to life-threatening proportions and then begin to assign blame.

We search for a single villain and a single answer. We produce so many volumes and so many words that while some of us solve the problem, some get bored and some go out of business. The anecdotal evidence of our productivity crisis is real. The tire industry is flat, the semiconductor business is being chipped apart byte by byte, and the auto industry has embarked on a crash program to maintain market share.

There are many theories (hypotheses) concerning the reasons for the productivity crisis in America. Let's look at some:

1. "It's all the workers' fault" or "You can't get good help anymore." The theory says that the unions want too much for too little, that kids are too anxious, too self-centered and have little respect for authority, and that everyone is drinking beer in the washroom. It goes on to offer that no one knows what a quality job is anymore.
2. "It's all management's fault," or "No one knows how to play this game." This theory asserts that the MBAs, lawyers and financial wizards have taken over and that all is done for the short-term bottom line. Rather than take risks, the theory goes, American managers try a new organizational chart or merge with another company. What they don't try is new production processes, changes in the corporate culture, or paying attention to employees. Further the theory asserts that no one knows what goes into production, since the top management did not come up through the ranks; pleasing Wall Street or the bankers is more important than pleasing customers.
3. "It's all Washington's fault" or "The devil made me do it." The theory asserts that the government created inflation and made everyone short-term conscious. And, the government created regulations so that money would have to be put into nonproductive equipment and things like equal employment opportunity. This was, according to

this line of thinking, an example of the government giving in to interest groups who want clean air, a safe working environment and equal opportunity.

4. "Its all the foreigners' fault." This theory profers that foreign governments are protecting their own markets while pushing into the US with high quality, low priced goods. What's worse, the theory goes, is that the countries that are doing it were built up after WWII with our money. What gratitude!
5. "Its the American culture" or "The decline and fall of New York." Since the days of the Puritans we Americans have taken a liking to finding the blame within ourselves. National heroes are rock stars, professional athletes and assorted misfits, all of whom make a lot of money without doing much work. We have a safety net, for the weak that discourages work. Getting dirty and taking risks is passe, the theory concludes.

These ideas are, of course, all right in reference to some specific situations and, of course, all wrong, since it is easy to find counter-arguments in any industry and many firms.

American labor can be the most or least productive in the world. We have, after all, the most educated labor force, but one that is often lacking in an understanding of the purpose of their job, and how they fit into the organization, and worried about whether they will have a job in the future. They do not need to work harder, just smarter in a more secure environment.

American management has the ability to manage well and plan for the future; the US did not become the most powerful economic power in the world with a bunch of people who did not know how to run a business in their time. But times have changed and management has not adapted well. Still, we do have marvelous success stories of new and expanding companies meeting and beating competition with a firm and definite strategy executed with the full commitment of their employees.

The government is too big; the result of citizen demands

for protection from the whims and abuses of the free market.

Unfortunately, all of the business community must live with regulations geared to the most serious and irresponsible offenders. This is, however, changing as the sifting and winnowing, always a part of government involvement, takes its toll in the form of unnecessary regulations and controls.

Foreign competition is a factor, but it has never deterred American development in the past and is not likely to do so in the future. We must act on our comparative advantages. If a foreign government wants to subsidize the supply of a cheaper and higher quality good to the American consumer, we should not lament. A trade barrier is only a short-run placebo.

And finally, certainly the affluence of America is partly to blame. Until very recently our young people were not going into business if they could help it. Whose fault was that? At what point did business begin to project itself as so solid and so sure that the sheer adventure and satisfaction of risk-taking dissappeared? Solidity and sobriety are great to attract a banker's attention, but not so great at getting the best and the brightest into the business world. Business could use the spunk and idealism that is present deep down in the youth of America.

All of the above are either general or anecdotal hypotheses about the way in which the American economy operates. Averages tell us little about firm-specific problems; and anecdotes are, by definition, illustrations that are not central to the issue.

It will do little good to dwell on whose fault it has been. Rather, attention should be paid to how we can reverse the direction and move forward with the confidence that fills our history. My work

with American firms tells me that they are not taking to heart the anecdotes that indicate nothing substantial can be done, nor are they viewing themselves or their workforce as average.

Following are some program examples that I have seen in operation.

Program Examples

As I noted at the beginning, those firms that are most successfully increasing productivity of their organization have taken a strategic approach. That is, they are looking at improvement from a broad point of view, encompassing all internal and external functions of the firm, and emphasizing not only cost savings, but also quality, dependability and flexibility. Moreover, the focus and measurements include direct, indirect and managerial employees, and the payoff is expected over the long term. In short, they have a strategic approach that turns on a view of the organization that can best be described as organic.

Program concentration centers on human resource issues, more than on automation. This emphasis is, I believe, partially an artifact of current high interest rates. Money for new investment is expensive; programs and incentives for the firm's human resources have lower initial investment costs and potentially high payoffs.

Once the strategy is formulated and a systems view adopted, I have found that the majority of firms have taken to appointing a person within the firm who is usually referred to as the "productivity czar." Ideally, this person is skilled in systems management, industrial engineering, computer technology, robotics, and human resource management; in addition, as a change

agent, he/she must have the negotiation skills of a diplomat. The job description sounds quite similiar to that of the Chief Operating Officer of the company. In fact, the job of productivity czar could be called redundant, since this is, indeed, what top management was supposed to have been doing all along.

AUTOMATION

All of the firms I have contact with have had ambitious automation plans "on the drawing boards." Most of the systems fell into the CAD, CAM and MRP realms. I must say that I have yet to see an operating CAM system, although CAD is quite common in high technology firms. Also, in those firms dealing directly or indirectly with the Department of Defense I have found MRP systems being installed; they take, I'm told, at least three years to become fully operational. Robotics, on the other hand, are often mentioned, but "down the road." As one executive said to me, "We've had an average \$13/hour labor cost here, and my financial wizzards tell me that even if we have to rebuild a robot twice over its life span, it will still cost only \$5/hour in total; we, of course, have robotics in the future."

Also, a great number of firms had plans to install personal computers (micros) for their executives and managers to utilize as decision support aids. This too requires a long time frame, since it requires a great deal of education and close cooperation between the DP department and the functional areas that will utilize the systems. This connection is still, unfortunately, in its infant stages. As the use of information systems becomes more and more driven by those who use them (the functional areas) rather than those

who supply them (the DP or IS department) decision support systems will be more useful and utilized.

Also, I have found that DP departments are beginning to utilize higher-level languages in anticipation of great increases in the demand for decision support systems. For example, Fortran IV or ANSI, in conjunction with newly developed reporting systems such as IMPS (Information Management Processing System), can be a highly efficient method of tailor-making reports for top management, and a way for top management to tailor-make their own reports in the future.

HUMAN RESOURCE PROGRAMS

People-related programs dominate the productivity enhancement scene. A few examples will illustrate:

1. Controlled Maintenance System (CMS). This is a simple program installed in a company that had a large machining department. It is based on the truism that machines do not break down all at once, but gradually. Thus, all operators were asked to spend one hour each week checking machine tolerances. During the first year, down time was reduced a full percent.
2. Production Activity Monitors (PAMs). Although initially these monitoring devices look like Fred Taylor housed in a microprocessor, they have been successful in monitoring output and throughput on electro-mechanical assembly operations. The objections to having production continuously monitored disappeared in one particular case when a small program was added to the PAM that immediately showed the bonus earned up until that point in the week. It is also worth noting that the best production workers were most enthusiastic about the system.
3. Quality Circles (QCs). There is no doubt that this idea has caught the eye of American managers. Tapping the workers' knowledge of the processes and possibilities for improvement in production makes sense. The educated American workforce operating in a group problem solving situation simply has to have payoffs. There are cautions, however; QCs cannot just be "parachuted" into an organization that has not had any group interaction before. People must work in groups to solve problems

within a culture where their jobs are secure and where they are aware of the delicacy of the process needed to change an organization. It is noteworthy that production groups have been part and parcel of gainsharing plans for over 30 years in the US. Most notable is the Scanlon plan, currently in operation in over 300 American companies.

4. Quality Control Circles (QCCs). I differentiate QCCs from QCs, since the former include a component that offers attention to the training of workers in basic statistical methods, so that they can spot variances on the line. This is the real idea behind the programs Dr. Edward Deming installed in Japanese manufacturing. It seems to pay off in the US as well.

A final word about QCs and QCCs. There is a great deal of research, particularly in reference to engineering and development groups, that indicates clearly that any group effort has a productive half-life. Those who have installed or plan on installing QCs or QCCs should seriously contemplate a rotating membership, possibly every six to nine months, to keep the spirits and ideas coming. Moreover, connecting an incentive system with the cost savings that result should be seriously considered. Finally, a word of caution is in order. QCs and QCCs must be set in a place where the culture is suited to them.

5. The Book. In conjunction with QCCs, one company has added a large "bible-sized" book with blank pages to each production area. Any employee can write a suggestion or idea in the book and management must respond, in writing, within 72 hours. After the initial playful period, the results have been very encouraging.
6. Turnover Reduction Programs. Virtually all of the companies with a long view have taken the turnover problem seriously. This issue is particularly important for those in firms that utilize computer professionals. The costs of turnover can be astronomical, especially when one calculates the direct and indirect costs. In one firm, three of the top 13 professionals in the IS department left within a one year period. The cost of replacing them and bringing the replacements up to full productivity was almost \$300,000. This brought top level attention to the establishment of career paths and other long view personnel programs.
7. Less Management, More Productivity (LMMP). One electronics company has cut their plant level supervision by 25 percent and pulled the workers into the process. The first six months showed a 10 percent output increase with no quality decrease. Impressive, and really quite Japanese.

8. Treat Your People Like Machines (TYPLM). In this particular company the computer department decided that they would offer the employees the same kind of day to day attention and long run updating as they did their computers. An interesting concept. No results as yet, but it fits quite well with the turnover reduction method of increasing corporate productivity.

There are many other examples of programs currently in place in the corporations with which I've had direct dealings. A summary of systems, programs and structures will be forthcoming through the MIT Industrial Liaison Program, later in the year.

MEASUREMENT

A word on measurement is in order. Many believe that measurement is difficult, if not impossible, for knowledge workers. I completely disagree with this assertion. Most measurement efforts become bogged down when the question is asked about comparability across companies or company divisions. My response is that comparability is not necessary. Productivity measurements are a tool for management within an organization. If the persons who are going to be gauged by the internal measurement are intimately involved in its formulation there is, in my experience, no problem at all. The measures can be ratios, metrics, awards, patents or anything else that is considered important to the group. The point is quite simple. The best and the brightest usually do like to have a goal, a measurement of progress.

SUMMARY

Finally, I would like to offer you a list of the 10 factors that I have seen to be the most important ingredients in successful

efforts to increase the productivity of a firm. These are not in priority order, nor do they offer a guarantee of success, but they do offer the beginnings of a formula.

1. A learning attitude was present in the companies. A willingness to listen and learn from other US and foreign competitors.
2. The firms are positive risk-takers, and have a long view for returns.
3. A strategy for the firm and its business units was in place. The strategy includes human resource management components.
4. A systems view is present. The firm is viewed as an organic entity and all employees and processes flow together.
5. Investment in education and training was foremost on the company's priority list.
6. People management is explicitly rewarded.
7. Productivity is measured for all in the organization, usually by groups.
8. Groups are used for suggestions, decision making and rewards.
9. Quality and productivity are viewed together.
10. The culture of the firm is explicitly identified and written down for all to see and refer to as strategy is being put together.

In summary, let me say that my optimism increases with each company contact. American managers are convinced that they must, and will be able to, regain world leadership in their industries.

The cup is, indeed, moving past the half-full mark.

(Special thanks to Jan Van Meter and Henry Erlich.)



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